

## Roading Database Case Study - suggested Partial set of Business Rules for the Conceptual ERD

Suggested Partial set of Business Rules for the Conceptual ERD are given in the table below:

### Note:

1. Only one side of the relationship is included for all relations except for many-to-many relationships (see point 3 below). You must derive the other side of the relationship based on the business rules.
2. Entity names are based on the names used in the case study - you may use different names.
3. Business rules for **many-to-many** relationships are shown in **coloured text (both sides of the relationship are included)** – you must transform these to equivalent logical relationships, i.e., by applying the mapping rules of transforming a conceptual ERD to a logical ERD.

EACH	ENTITY 1	May/Must (Participation)	verb	number (Cardinality)	ENTITY 2
	ROAD CATEGORY	may be	<i>used by</i>	zero or many	ROAD
	LOCATION	may	<i>have</i>	zero or many	ROAD (that start at the location)
	LOCATION	may	<i>have</i>	zero or many	ROAD (that end at the location)
	ROAD	maybe	<i>part of</i>	zero or many	ROAD
	PROJECT	must	<i>involve in</i>	one or many	ROAD
	ROAD	may be	<i>involved in</i>	zero or many	PROJECT
	PROJECT	may	<i>involve</i>	zero or many	CONTRACT
	CONTRACT	may	<i>have</i>	zero or many	EMPLOYEE (as managers)
	ROLE	may be	<i>assigned to</i>	zero or many	EMPLOYEE
	EMPLOYEE	may be	<i>assigned</i>	zero or many	ROLE